

Using DNA to Pick a Winner



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It is the question that has perplexed race goers for generations. What makes one horse run faster than another?

According to Dr Emmeline Hill, a leading horse genomics researcher and lecturer in the UCD School of Agriculture and Food Science, the answer lies in the genes. In 2009 her NovaUCD-headquartered company, Equinome, launched a pioneering test to prove it.

Hill’s research into the so-called “speed gene” began in 2004 when she received funding from Science Foundation Ireland to look at the genetic influences on racing performance in Thoroughbred horses. Hill comes from a family steeped in the horseracing tradition and it was her unique combination of scientific and industry knowledge that led to the development of the Equinome Speed Gene Test.

Built around scientific excellence, Equinome’s proprietary technology can predict the best race distance (short, middle or long) for an individual horse. This has the potential to transform how those in the multi-billion global bloodstock industry make key decisions. For example, racehorse owners and trainers can use the information for purchasing and training and to identify the most appropriate races for their horses. Breeders, stallion managers and bloodstock agents can use the test to make more precise selection and breeding decisions.

Hill says the support and backing of NovaUCD and her partnership with horse trainer, Jim Bolger, were key elements in the successful launch of Equinome. “I didn’t start out with the expectation of building a successful global business but in fact that is what has been achieved. We have customers in 14 countries in all the major bloodstock regions in the world,” she says.

While Equinome was still taking shape, Hill joined the NovaUCD Campus Company Development Programme, a nine-month, part-time enterprise-support initiative aimed at giving academics practical business training and consultancy support. In fact Equinome was the overall winner of the 2009 programme.

“When it became apparent that we had a product with good commercial potential I made contact with the team at NovaUCD. Their support was really important to the company’s development as they provided the commercialisation know-how and the IP protection knowledge which I didn’t have. They also gave me the confidence to believe in my idea. This is really important when you don’t come from a business background. To have a partner of Jim Bolger’s calibre and experience on one side and NovaUCD on the other was of huge value.”

In business, timing is everything and, on the face of it, 2010 was not a good year for Equinome to start pitching a pioneering product at the Irish bloodstock market. The industry had suffered a major downturn due to the recession and there was a 40% drop in the number of new foals being born.

Equinome’s original plan of finding its feet in the Irish and UK markets before going international was shelved. “We had to change our strategy very quickly and look to Australia, the US and other overseas markets,” Hill says. “This actually proved beneficial in that we became established internationally much faster than we had intended. As a result, a large proportion of our customers are outside Ireland.”

By the time the Equinome Speed Gene Test was launched, Hill’s team had already begun work on other applications and, in 2011, a second product, the Equinome Elite Performance Test, was unveiled. This identifies horses with the greatest genetic potential for racecourse success.

Equinome now employs six people in Ireland and has a permanent office in Melbourne, Australia. All of the testing is carried out at UCD with samples flown in daily from around the world.

“We have broken new ground but we won’t be sitting back,” Hill says. “It is our intention to continue developing new products and we will be adding another test to our portfolio in the near future. There is also ongoing work we can do to refine our testing as new pieces of technology become available. For now the focus is on the Thoroughbred industry but we may look at new areas. We are only going three years and did meet a certain level of conservatism early on. But that has changed. We are talked about in the racing media and people know who we are.”

While Hill acknowledges that teaching full-time, carrying out research and being involved with Equinome is demanding, she believes that both her company and UCD benefit from her close association with academia and industry. “My research has been critical to the development of the company as has access to the body of knowledge that resides in UCD. In return UCD derives income from the licence agreement, there are job opportunities for UCD graduates with us and the University has strong links with a company at the leading-edge in its field,” she says.

